217/782-2113

CONSTRUCTION PERMIT – NSPS SOURCE

PERMITTEE

Rochelle Ethanol, LLC
Attn: Jeffrey Whipple
5 Stonewicke Drive
Pittstown, New Jersey 08867

Application No.: 04020058 I.D. No.: 197445AAC
Applicant's Designation: Date Received: July 5, 2005
Subject: Ethanol Plant
Date Issued: March 21, 2006
Location: 2200 Channahon Road (US Route 6), Joliet, Will County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a fuel ethanol plant with a nominal design capacity of 50 million gallons/year denatured ethanol, including the units listed in Attachment A and other ancillary operations, as described in the above-referenced application. This Permit is subject to the following conditions and the standard conditions attached hereto.

Section 1: Plant-Wide Conditions

1.0 Introduction

1.1 Plant-Wide Operating Limitations

a. The amount of grain processed at this plant shall not exceed 50,000 tons/month and 500,000 tons/year.

b. Ethanol production from the plant, determined as denatured ethanol shipped from the loading rack, shall not exceed 5 million gallons/month and 50 million gallons/year.

c. Annual natural gas usage by the plant shall not exceed 2058 million cubic feet.

d. Compliance with these annual limitations and other annual limitations of this permit shall be determined from a running total of 12 months of data, unless otherwise specified in the particular condition.

1.2 Plant-wide Emission Limitations

a. Emissions from the plant shall not exceed the limitations in Table I. For purposes of determining compliance with these limitations, the procedures in the unit-specific conditions of this permit shall be followed unless other credible evidence provides a more accurate estimate of emissions.

b. i. This permit is issued based on the source not being a major source for Hazardous Air Pollutants (HAP), so that this source is not subject to the requirements of Section 112(g) of the Clean Air Act.

ii. If not otherwise specified for a particular emission unit, the emissions of HAPs, other than acetaldehyde, shall not exceed the following limits, which are expressed as a percentage of the VOM limitations:

Individual HAP: 10.0 percent of VOM limit
Aggregate HAPs: 15.0 percent of VOM limit.

Note: Refer to Tables I for limitations for acetaldehyde emissions.

1.3 Regulations of General Applicability

Emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 25 miles per hour, pursuant to 35 IAC 212.301 and 212.314.

b. No person shall cause or allow the emission of smoke or other particulate matter with an opacity greater than 30 percent into the atmosphere from any emission unit, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) or 212.124.

1.4 Good Air Pollution Control Practice

The Permittee shall operate and maintain the emission units at this plant, including associated air pollution control equipment, in a manner consistent with good air pollution control practice, as follows:

a. At all times, including periods of startup, shutdown, malfunction or breakdown, operate as practicable to minimize emissions.

b. Conduct routine inspection and perform appropriate maintenance and repairs to facilitate proper functioning of equipment and minimize or prevent malfunctions and breakdowns.

c. Install, calibrate and maintain required instrumentation according to the supplier’s specifications or as otherwise necessary to assure reliable operation of such devices.

1.5 Retention and Availability of Records

All records, including logs and procedures, required by this permit shall be retained by the Permittee at a readily accessible location at the source for at least three years from the date of entry and shall be available for inspection by the Illinois EPA upon request. Any records retained in electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection. The Permittee shall provide copies of any required records requested by the Illinois EPA as soon as is practicable, considering the nature and extent of the requested records.

1.6 Plant-Wide Reporting

a. The Permittee shall submit Quarterly Compliance Reports as specified in the unit specific conditions of this permit and Condition 3.4(b).

b. i. The Permittee shall submit an Annual Emission Report in accordance with 35 IAC Part 254.

ii. With its Annual Emission Report the Permittee shall report:

A. The annual operating hours of the distillation process, fermentation process and the feed drying system, and the percentage of these operating hours, if any, that these units operated out of compliance.

B. Significant deficiencies in the condition of emission units and control systems as related to emissions identified during the detailed annual inspection of equipment.

c. i. The Permittee shall notify the Illinois EPA within 30 days of any deviation from the operating limitations in Condition 1.1 or the annual emission limitations set for the plant. Any such notification shall include the information specified in Condition 3.4.

ii. Not withstanding the above or provisions in the Unit Specific Conditions of this permit for reporting deviations, if deviation will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity, if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. Such notification shall be followed by such other notification or reporting as required for the deviations.

1.7 Submission of Reports

a. i. All notifications and reports required by this permit shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Enforcement Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. A copy of each report or notification shall also be sent directly to the Illinois EPA's regional office at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

b. When this permit requires immediate notification, such notification shall be provided by telephone and followed by facsimile or e-mail transmittal of a narrative report.

1.8 Other Requirements

a. This permit does not relieve the Permittee of the responsibility to comply with all Local, State and Federal Regulations which are part of the applicable Illinois State Implementation Plan, as well as all other applicable Federal, State and Local requirements.

b. In particular, this permit does not excuse the Permittee from the obligation to undertake further actions at the source beyond those specified in the application as may be needed to eliminate air pollution, including nuisance due to odors, such as raising the height of stacks, using alternative scrubbant materials, installing back-up control systems, and altering process conditions in emission units.

Section 2: Unit Specific Conditions

2.1 Package Boiler

2.1.1 Description

One natural gas fired boiler is used to generate the steam to supply the heat for the ethanol production process.

2.1.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Boiler	Natural Gas Fired Boiler (120 Million Btu/Hr)	Low-NO_x burner

2.1.3 Applicability Provisions and Applicable Regulations

a. The boiler is subject to the federal Standards of Performance (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db and related provisions in Subpart A. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

The emission of nitrogen oxides (NO_x) from the boiler, including periods of startup, malfunction, and breakdown, shall not exceed 0.1 lb/mmBtu in accordance with the provisions of the NSPS, 40 CFR 60.44b(a)(1)(i), for low heat release steam generating units.

b. The emission of carbon monoxide (CO) from boiler shall not exceed 200 ppm, corrected to 50 percent excess air [35 IAC 216.121].

c. The emission of smoke or other particulate matter from boiler shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity readings in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

2.1.4 Non-Applicability of Regulations of Concern

There are no applicable NSPS requirements for particulate matter or sulfur dioxide pursuant to 40 CFR 60.43b or 60.42b, respectively, as the boiler is only firing natural gas.

2.1.5 Operational and Production Limits and Work Practices

a. Natural gas shall be the only fuel fired in the affected boiler.

b. The rated firing rate of boiler shall not exceed 120 million Btu/hour.

c. Boiler shall be equipped, operated, and maintained with low NO_x combustors for natural gas firing.

d. At all times, the Permittee shall maintain and operate the boiler that is subject to the NSPS, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.1.6 Emission Limitations

a. The boiler shall be designed and operated to emit no more than 0.06 lb NO_x per million Btu heat input.

b. Emissions of the affected boiler shall not exceed the following limits. These limits are based on information in the application including the maximum firing rate (120 million Btu/hr), the emission factors based on the manufacturer's test data for NO_x and CO emission and standard emission factor for other pollutants and continuous operation:

	Emission Rate Boiler	
Pollutant	Lb/hr	Tons/yr
NO_x	7.20	31.54
CO	7.20	31.54
VOM	1.20	5.26
PM	1.20	5.26
SO_2	0.07	0.29

2.1.7 Testing Requirements

The Permittee shall perform emission tests as requested for an affected boiler as specified in Condition 3.1.

2.1.8 Monitoring Requirements

a. The Permittee shall install, maintain, and operate a continuous monitoring system on the boiler for NO_x emissions. This system shall be operated during all periods of operation of the boiler except for continuous monitoring system breakdowns and repairs. Data is to be recorded during calibration checks, and zero and span adjustment. [40 CFR 60.48b]

b. i. These monitoring systems shall be operated during all periods of operation of the combustion unit

except for continuous emission monitoring system breakdowns and repairs. The Permittee shall comply with applicable requirements of the NSPS for continuous emission monitoring.

ii. The Permittee shall maintain records for the continuous monitoring systems, including recorded emission concentrations and records of maintenance, calibration, and operational activity associated with the system.

iii. The Permittee shall submit quarterly monitoring reports to the Illinois EPA for these systems.

c. Following the shakedown period, NO_x continuous emission monitoring on the boiler may be discontinued if a parametric monitoring plan is approved by the Illinois EPA.

2.1.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for boiler:

a. A file of manufacturer's or supplier's specifications for:

i. Boiler maximum fuel firing rate.

ii. Continuous monitoring devices.

b. Records to be kept for each operating day, pursuant to the NSPS, 40 CFR 60, Subpart Db:

i. Calendar date [40 CFR 60.49b(g)(1)];

ii. Total natural gas usage for boiler (ft^3/day) [40 CFR 60.49b(d)];

iii. The average hourly NO_x emission rates (expressed in lb/million Btu heat input) measured or if parametric monitoring is approved, records shall be kept of NO_x emissions as predicted by parametric monitoring [40 CFR 60.49b(g)(2)];

iv. The 30-day average NO_x emission rates (lb/million Btu heat input) calculated at the end of each operating date from the measured or if parametric monitoring is approved, records shall be kept of NO_x emissions as predicted by parametric monitoring, hourly NO_x emission rates for the preceding 30 operating days [40 CFR 60.49b(g)(3)];

v. Identification of the operating date when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken [40 CFR 60.49b(g)(4)];

vi. Identification of the operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient and a description of corrective actions taken [40 CFR 60.49b(g)(5)];

vii. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data [40 CFR 60.49b(g)(7)];

viii. Identification of the times when the pollutant concentration exceeds full span of the continuous monitoring system [40 CFR 60.49b(g)(8)];

ix. Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3 [40 CFR 60.49b(g)(9)];

x. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60 [40 CFR 60.49b(g)(10)];

c. Calculations of the annual capacity factor, determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar quarter, per quarter [40 CFR 60.49b(d)];

d. Operating hours of boiler (hours/month and hours/year).

e. The Permittee shall keep inspection, maintenance, and repair logs with date and nature of such activities for the boiler.

f. The Permittee shall keep all other data, not addressed above, used or relied upon by the Permittee to determine emissions, including hourly emission data for the boiler as determined by continuous emission monitoring.

g. The Permittee shall keep records of NO_x, CO, PM, SO_2, VOM, and HAP emissions from the boiler (tons/month and tons/year), based on operating data for the boiler and the emission monitoring data (NO_x) or appropriate emission

factors, with supporting calculations. These records shall be compiled on at least a quarterly basis.

2.1.10 Reporting Requirements

a. The Permittee shall fulfill all applicable notification and reporting requirements of the NSPS for the boiler including:

i. Written notification of commencement of construction, no later than 30 days after such date [40 CFR 60.7(a)(1)];

ii. Written notification of the actual date of initial startup, within 15 days after such date [40 CFR 60.7(a)(3)].

b. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected boiler as follows. These reports shall include the information specified in Condition 3.4.

i. For NO_x emissions from the boiler, excess emissions are defined as any calculated 30-day rolling average NO_x emission rate, as (1) determined under 40 CFR 60.46b(e), that exceeds the applicable NSPS standard, and (2) any 3-hour block average NO_x emission rate that exceeds the hourly NO_x limitation in Condition 2.1.6(b).

ii. Excess opacity that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

iii. The deviations addressed above and all other deviations shall be reported in the quarterly compliance report.

2.1.11 Compliance Procedures

Compliance with the emission limits of Condition 2.1.6 shall be based on the records required by Condition 2.1.9 and appropriate emissions factors developed from testing of the boiler (NO_x) or standard emission factors.

2.2 Diesel Generator

2.2.1 Description

One diesel-fired emergency generator would be used to supply electricity to the plant during emergency purposes when the facility experiences a loss of electrical service from the public utility company. The emergency generator would also be used to reduce load during the high demand periods in future.

2.2.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Emergency Generator	Diesel-fired Emergency Generator (1825 kw)	----

2.2.3 Applicability Provisions and Applicable Regulations

a. The emission of smoke or other particulate matter from emergency generator shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined by 6-minute averages of opacity readings in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

2.2.4 Non-Applicability of Regulations of Concern

None

2.2.5 Operational and Production Limits and Work Practices

a. Distillate fuel oil shall be the only fuel fired in the emergency generator.

b. Emergency generator shall not operate more than 500 hours per year.

c. Sulfur content of the fuel being fired in the emergency generator shall not exceed 0.05% weight.

2.2.6 Emission Limitations

a. Emissions from the emergency generator shall not exceed the following limits. These limits are based on the information provided in the permit application including the maximum capacity of emergency generator (1825kw), emission factors and maximum operation (500 hours per year).

Pollutant	Emission Rate	
	(Lb/Hr)	(Tons/Yr)
NO_x	52.69	13.17
CO	0.97	0.24
VOM	0.97	0.24
PM	0.48	0.12
SO_2	0.31	0.08

2.2.7 Testing Requirements

Upon written request by the Illinois EPA, the Permittee shall perform emission tests as requested for an emission unit as specified in Condition 3.1.

2.2.8 Monitoring Requirements

None

2.2.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items:

a. Distillate fuel usage for the emergency generator, gallons/month and gallons/yr;

b. The sulfur content of the distillate fuel oil used in the emergency generator (% by weight), which shall be recorded for each shipment of oil delivered to the source.

c. Operating hours for emergency generator (hours/month and hours/year).

d. Applicable emission factors for the emergency generator, with supporting documentation.

e. Monthly and annual NO_x, CO, PM, SO_2, and VOM emissions from the emergency generator based on fuel consumption and other operating data, and appropriate emission factors, with supporting calculations.

2.2.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the emergency generator as follows. These reports shall include the information specified in Condition 3.4.

i. The use of distillate fuel oil with sulfur content in excess of the limit specified in this permit with the length of time this fuel was used and the effect on the emission of SO_2.

ii. The deviations addressed above and all other deviations shall be reported in the quarterly compliance report.

2.2.11 Compliance Procedures

Compliance with the emission limits of Condition 2.2.6 shall be based on the records required by Condition 2.2.9 and appropriate emissions factors.

2.3 Grain Receiving, Handling, Milling, and Processing

2.3.1 Description

The plant includes a grain elevator at which corn is received by truck or rail car and stored in bins prior to processing. The initial processing of the corn occurs in the elevator, when the corn is screened or cleaned to remove cobs and other foreign matter. The cleaned grain is then transferred to a "day bin", ground in a hammermill and conveyed to the slurry tank for enzymatic processing.

2.3.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Grain Receiving and Storage System	Truck and Rail Dump Station	Baghouse 1
	Conveyors	
	Elevators	
	Storage Silos	
	Cleaner	Baghouse 2
	Grain Surge Bin	
	Hammermill Feed	
Grain Milling	Hammermills	Baghouse 3
	Hammermill Discharge Conveyors	

2.3.3 Applicability Provisions and Applicable Regulations

a. i. The "affected grain handling operations" for the purpose of these unit-specific conditions, are the grain handling operation described in Conditions 2.3.1 and 2.3.2.

ii. The "affected grain milling operations" for the purpose of these unit-specific conditions, are the grain milling operation described in Conditions 2.3.1 and 2.3.2.

b. The affected grain handling operations are subject to 35 IAC 212, Subpart S: Agriculture. The Permittee shall comply with all applicable requirements of Subpart S. [See Conditions 2.3.5(a) and (b)]

c. Affected grain milling units are subject to 35 IAC 212.321, which provide that no person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission

units, at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c).

2.3.4 Non-Applicability of Regulations of Concern

a. The affected grain handling operations are not subject to 35 IAC 212.321, because the affected operations are subject to 35 IAC 212, Subpart S [35 IAC 212.461(a)].

b. This permit is issued based on the affected operations not being subject to 40 CFR 60, Subpart DD: Standards of Performance for Grain Elevators, because the source's total permanent grain storage capacity will not exceed the applicability threshold of the NSPS (threshold of 1,000,000 bushels permanent storage capacity).

2.3.5 Operational Limits and Control Requirements

a. Housekeeping Practices. The Permittee shall implement and use the following housekeeping practices for affected operation, pursuant to 35 IAC 212.461(b):

i. Air pollution control devices shall be checked daily and cleaned as necessary to insure proper operation.

ii. Cleaning and Maintenance.

A. Floors shall be kept swept and cleaned from boot pit to cupola floor. Roof or bin decks and other exposed flat surfaces shall be kept clean of grain and dust that would tend to rot or become airborne.

B. Cleaning shall be handled in such a manner as not to permit dust to escape to the atmosphere.

C. The yard and surrounding open area, including but not limited to ditches and curbs, shall be cleaned to prevent the accumulation of rotting grain.

iii. Dump Pit.

A. Aspiration equipment shall be maintained and operated.

B. Dust control devices shall be maintained and operated.

iv. Property. The yard and driveway of any source shall be asphalted, oiled or equivalently treated to control dust.

v. Housekeeping Check List. A written Housekeeping Check List for the grain handling operation, developed and maintained by the Permittee, shall be completed by the manager of the operation on at least a monthly basis and copies maintained on the premises for inspection by the Illinois EPA.

b. Individual grain handling operations shall comply with applicable requirements of 35 IAC 212.462 (see below), if a certified investigation performed by the Illinois EPA determines that such operation is causing or tending to cause air pollution. [Section 9 of the Environmental Protection Act]

i. Cleaning and Separating Operations. [35 IAC 212.462(a)]

A. Particulate matter generated during cleaning and separating operations shall be captured to the extent necessary to prevent visible particulate matter emissions directly into the atmosphere.

B. Air contaminants collected from cleaning and separating operations shall be conveyed through air pollution control equipment, which has a rated, and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

ii. Dump-Pit Areas. [35 IAC 212.462(b)]

A. Induced draft shall be applied to major dump pits and their associated equipment (including, but not limited to, boots, hoppers and legs) to such an extent that a minimum face velocity is maintained, at the effective grate surface, sufficient to contain particulate emissions generated in unloading operations. The minimum face velocity at the effective grate surface shall be at least 200 feet per minute.

B. The induced draft air stream shall be confined and conveyed through air pollution control equipment which has an overall rated and actual particulate collection efficiency of not less than 90 percent by weight;

C. Means or devices (including, but not limited to, wind deflectors) shall be employed to prevent a wind velocity in excess of 50 percent of the induced draft face velocity at the pit; provided, however, that such means or devices do not have to achieve the same degree of prevention when the ambient air wind exceeds 25 mph.

iii. Internal Transferring Area. [35 IAC 212.462(c)]

A. Internal transferring area shall be enclosed to the extent necessary to prohibit visible particulate matter emissions directly into the atmosphere.

B. Air contaminants collected from internal transfer operations shall be conveyed through air pollution control equipment which has a rated and actual particulate removal efficiency of not less than 90 percent by weight prior to release into the atmosphere.

c. The Permittee shall operate the baghouses of the affected operations with a pressure drop that is within a range that is consistent with manufacturer's recommended levels or that during emission testing that demonstrated compliance with applicable requirements.

d. The Permittee shall operate and maintain air pollution control equipment in a manner that assures that applicable requirements are met. The actions taken by the Permittee to meet this requirement shall include at least the following:

i. Written operating procedures shall be maintained and updated describing normal process and equipment operating parameters; monitoring or instrumentation for measuring control equipment operating parameters, if any; and control equipment inspection and maintenance practices. With respect to control equipment maintenance practices, the operating procedures may incorporate the manufactures recommended operating instructions, if a copy of these instructions is attached to the procedures.

ii. Visual inspections of air pollution control equipment shall be conducted on a regular schedule. These inspections shall include a detailed inspection of the performance and condition of control equipment at least once per year.

2.3.6 Emission Limitations

a. i. Fabric filters (baghouses) on affected processes shall comply with an emission limit of 0.01 grain per standard cubic foot (gr/scf).

ii. There shall be no visible emissions of fugitive emission, as defined by 40 CFR 60.301, from the affected processes.

b. i. Particulate matter emissions from affected operation shall not exceed the following limits. These limits are based on information provided in the application.

Operation	Emissions (Lb/Hr)	Emissions (Ton/Yr)
Grain Receiving and Handling	2.74	1.85
Grain Cleaning	0.51	2.25
Grain Milling	0.99	4.32
TOTAL		6.98

ii. The above limits do not account for uncaptured particulate matter emissions from the receiving and handling of grain, which shall not exceed 1.52 tons/year.

2.3.7 Testing Requirements

The Permittee shall perform emission tests as requested for affected operations as specified in Condition 3.1.

2.3.8 Monitoring Requirements

The Permittee shall install, operate, and maintain instrumentation on each baghouse for the affected operation to measure pressure drop across the baghouse.

2.3.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected operations:

a. The permanent grain storage capacity of the plant, with supporting documentation, which record shall be updated if the permanent grain storage capacity of the plant changes.

b. A copy of the manufacturer’s specifications and recommended operating and maintenance procedures for each baghouse for the affected operations.

c. Records related to grain throughput, on a monthly basis:

i. Grain received (tons/month).

ii. Grain in storage (tons).

iii. Grain processed, based on amount received adjusted for change in amount stored (tons/month).

iv. Grain processed (tons/year).

d. The differential pressure of the baghouses at least once per operating day.

e. Logs for inspections, other equipment observations, preventative maintenance, maintenance activities other than preventative maintenance, and repair of air pollution control equipment which include: date, duration, nature, and description of observation or action.

f. i. Documentation for the PM emission factor(s) used by the Permittee to determine emissions of the affected operation.

ii. All other data used or relied upon to determine the PM emissions affected operations.

iii. PM emissions from affected operations (tons/month and tons/year) based on appropriate emission factors and operating data, with supporting calculations.

2.3.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected operations as follows. These notifications shall include the information specified by Condition 3.4.

i. Excess opacity that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.3.11 Compliance Procedures

Compliance with the emission limits of Condition 2.3.6(b) shall be based on the records required by Condition 2.3.9, emission factors published by USEPA for uncontrolled or uncaptured operations and the manufacturer guaranteed emissions rates for air pollution control equipment for controlled operation.

2.4 Feed Preparation and Fermentation

2.4.1 Description

Ethanol is produced by fermentation of the starch in corn. Ground corn is prepared for fermentation by converting it to "mash", by the addition of water and enzymes in a series of liquefaction and saccharification tanks that with heating, break the ground corn into fine slurry. In the fermentation tanks, yeast is added to the mash to begin the batch fermentation process.

The CO_2-rich gas generated by the fermentation tanks is routed through a scrubber to recover ethanol and other organic compounds in the exhaust. The fermentation scrubber is also referred to as the "CO_2 scrubber", as it scrubs the CO_2 stream from the fermentation tanks. The wastewater generated from the scrubbing process is routed back to the fermentation process for reuse.

2.4.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Feed Preparation	Process Tanks	----
	Slurry Tank	Vent Gas Scrubber
	Cook Water Tank	
	Flash Tank	
	Liquifaction Tank	
	Yeast Tank	
	Misc. Chemical Tanks	----
Fermentation	Fermenters	Fermentation Scrubber
	Beer Well	

2.4.3 Applicability Provisions and Applicable Regulations

a. An "affected unit" for the purpose of these unit specific conditions is an emission unit described in Conditions 2.4.1 and 2.4.2.

b. The affected units are subject to 35 IAC 212.321. (Refer to Condition 2.3.3(c).)

c. The affected units are subject to 35 IAC 218.301, which provides that no person shall cause or allow the discharge of more than 8 lbs/hr of organic material from an emission source, unless either emissions are controlled by at least 85 percent, as provided in 35 IAC 218.302, or the emissions do not qualify as photochemically reactive material, as defined by 35 IAC 211.4690 and do not contribute to an odor nuisance.

2.4.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected units not being subject to the NSPS for VOC Emissions from SOCMI Reactor Process, 40 CFR 60 Subpart RRR, because the fermentation tanks involve biological reaction and operate as batch processes.

2.4.5 Operational and Production Limits and Work Practices

a. i. The key operating parameters of the scrubber for the affected units shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements:

A. Minimum scrubber water flow rate: hourly average.

B. Maximum scrubber water outlet temperature: hourly average.

C. Maximum scrubber exhaust gas outlet temperature: hourly average.

ii. If the differential pressure across the scrubber is outside of the normal operating range as defined by the Permittee for a period of 4 hours, the Permittee shall inspect the scrubber within 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range.

iii. The Permittee shall operate and maintain the scrubber in accordance with written procedures developed and maintained by the Permittee.

b. i. If emission testing of the affected process shows compliance with requirements for VOM by less than a 20 percent margin, the Permittee shall implement a Control Improvement Program (Program) for the affected process with the objective of achieving compliance by a margin of at least 20 percent.

ii. The Permittee shall submit a copy of the program to the Illinois EPA for its review and comments within 30 days after receiving test results that triggers this requirement for a Control Improvement Program (Program).

iii. A. If the emission testing demonstrated that the compliance margin was between 10 and 20

percent, the Program shall be completed in one year.

B. If the emission testing demonstrated the compliance margin was less than 10 percent, the Program shall be completed in six months.

C. Following completion of the Program, the Permittee shall again test VOM emissions from the affected process.

2.4.6 Emission Limitations

a. The VOM emissions from the affected processes that are to be controlled, i.e., the fermentation tanks and beer well, shall be controlled by at least 99 % weight percent.

b. i. Emissions of VOM from the affected processes that are to be controlled shall not exceed 4.57 pounds/hour and 20.0 tons/year.

ii. This permit is issued based on negligible VOM emissions from the affected process that are not controlled. For this purpose, VOM emissions from these units, in total, shall not exceed 0.1 lb/hr and 0.44 tons/year.

iii. This permit is issued based on negligible PM emissions from the affected process emission units. For this purpose, PM emissions from these units, in total, shall not exceed 0.1 lb/hr and 0.44 tons/year.

c. i. The acetaldehyde emissions of the affected process shall not exceed 1.10 lb/hr and 4.9 tons/yr.

ii. The emissions of individual HAPs, other than acetaldehyde, from the affected process shall not exceed 0.15 lb/hr and 0.48 tons/yr.

iii. The emissions of total HAPs, other than acetaldehyde from the affected process shall not exceed 0.2 lb/hr and 0.88 tons/yr.

2.4.7 Testing Requirements

The Permittee shall perform emission tests as requested for an emission unit as specified in Condition 3.1.

2.4.8 Monitoring Requirements

a. i. The Permittee shall equip the fermentation scrubber with continuous monitoring devices for the scrubber water flow rate, scrubbant discharge temperature at the bottom of the scrubber, scrubber exhaust gas discharge temperature, and differential pressure across the packed bed and demister section of the scrubber. These monitoring devices shall be installed, operated, maintained and calibrated according to the supplier's specifications and record minute-by-minute and average hourly data. The Permittee shall maintain logs for the maintenance and repair of these devices.

ii. During any period when measurements are not recorded by the computerized data logging system, measurements shall be manually recorded at least twice per shift.

2.4.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected processes:

a. Records of normal process parameters, with supporting calculations and documentation:

i. Fermentation feed rate;

ii. Fermentation tank liquid levels;

iii. Quantity of grind (ground grain) in each fermentation tank.

b. Records for any period during which any affected process was in operation when the scrubber was not in operation or was malfunctioning so as to cause emissions in excess of applicable emissions limitation.

c. The Permittee shall keep a log for inspection, maintenance, and repairs for fermentation units and the associated scrubber.

d. Records for any upsets in fermentation operations or other operations that could generate additional VOM and HAP emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

e. Records of the VOM and HAP emissions from the affected processes (tons/month and tons/year), as determined at the

scrubber and any other vents, based on appropriate emission factors, with supporting calculations.

Note: For the purpose of these records, HAPS shall include acetaldehyde and other organic HAPs emitted from the affected processes, as addressed during emissions testing.

2.4.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected processes as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of applicable requirements for the scrubber by more than 2.0 percent, as determined by the monitoring required by Condition 2.4.8, that lasts longer than three hours, the Permittee shall immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. If there is any deviation of the requirements of this permit, not addressed by the above reporting requirements, as determined by the records required by this permit or by other means, the Permittee shall submit a report with the quarterly compliance report.

c. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.4.11 Compliance Procedures

a. Compliance with the emission limitations of Condition 2.4.6 shall be based on the records required by Conditions 2.4.8, 2.4.9, and appropriate emissions factors developed from testing of the affected processes.

2.5 Distillation

2.5.1 Description

During the distillation process, the solids and water are separated from the ethanol-rich "beer" produced in the fermentation tanks with a vacuum distillation system, to produce approximately 190 proof ethanol (95% ethanol, 5% water). The remaining water in the ethanol is removed in a molecular sieve to produce approximately 200 proof (100% ethanol). Denaturant is added to the finished product prior to storage.

The emissions from the distillation process, along with the emissions of certain units associated preparation for fermentation are controlled by a scrubber.

Stillage from the bottom of the distillation system is routed to mechanical centrifuges for de-watering. The recovered water or "thin stillage" from the centrifuges is processed in a steam driven evaporator to produce thick syrup. The emissions from these units are small and not controlled. The wet cake from the centrifuges and the syrup solubles from the evaporator are mixed and conveyed to the feed operations to either shipped out as wet cake or be further processed by drying.

2.5.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Distillation	Beer Column	Vent Gas Scrubber
	Stripper Column	----
	Rectifier Column	----
	Molecular Sieve	----
	Mash Screen	----
Solid Separation and Evaporation	Evaporators	----
	Centrifuges	----
	Whole Stillage Tank	Vent Gas Scrubber
	Syrup Tank	----
	Thin Stillage Tank	Vent Gas Scrubber

2.5.3 Applicability Provisions and Applicable Regulations

a. An "affected process" for the purpose of these unit specific conditions is an emission unit described in Conditions 2.5.1 and 2.5.2.

b. The affected units are subject to 35 IAC 212.321. [Refer to Condition 2.3.3(c)]

c. The affected units are subject to 35 IAC 218.301. [Refer to Condition 2.4.3(c)]

2.5.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected process not being subject to either 40 CFR 60, Subpart NNN or RRR, Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations, or Reactor Processes, respectively, based upon guidance from USEPA that this regulation is not applicable to processing of material produced by biological reaction.

b. This permit does not address the applicability of 35 IAC 215.301 for the affected processes because the organic material emissions of the processes are required to be controlled by greater than 85%, such that organic material emissions are less than 8.0 lb/hr. [Refer to Condition 2.5.6(a)]

2.5.5 Operational and Production Limits and Work Practices

a. Scrubber operating requirements

i. The operating parameter(s) of the air pollution control equipment for the affected distillation units as follow, shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements:

A. Minimum scrubber water flow rate: hourly average.

B. Maximum scrubber water outlet temperature: hourly average.

C. Average scrubber exhaust gas outlet temperature: hourly average.

ii. If the differential pressure across the scrubber is outside of the normal operating range as specified by the manufacturer for a period of 4 hours, the Permittee shall inspect the scrubber within 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range.

iii. The Permittee shall operate and maintain the scrubber in accordance with written procedures that it develops and maintains.

b. If emission testing of the affected process shows compliance with VOM limitations by less than a 20 percent

margin, the Permittee shall implement a Control Improvement Program for the affected process, as set by Condition 2.4.5(b).

2.5.6 Emission Limitations

a. The VOM emissions from the affected process shall be controlled by at least 99 % weight percent.

b. i. Emissions of VOM from the affected processes that are controlled by distillation scrubbers shall not exceed 0.57 pound/hour and 2.50 tons/year.

ii. This permit is issued based on negligible VOM emissions from the affected process that are not controlled. For this purpose, VOM emissions from these units, in total, shall not exceed 0.1 lb/hour and 0.44 tons/year.

iii. This permit is issued based on negligible PM emissions from the affected process emission units. For this purpose, PM emissions from these units, in total, shall not exceed 0.1 lb/hour and 0.44 tons/year.

c. i. The acetaldehyde emissions of the affected process shall not exceed 0.4 lb/hour and 1.8 tons/year.

ii. The emissions of individual HAPs, other than acetaldehyde, from the affected process shall not exceed 0.1 lb/hour and 0.44 tons/year.

iii. The emissions of total HAPs, other than acetaldehyde, from the affected process shall not exceed 0.1 lb/hour and 0.44 tons/year.

2.5.7 Testing Requirements

The Permittee shall perform emission tests as requested for an affected process as specified in Condition 3.1.

2.5.8 Monitoring and Instrumentation Requirements

a. The Permittee shall equip the distillation scrubber with a continuous monitoring device for scrubber water flow rate, scrubbant discharge temperature at the bottom of the scrubber, and scrubber exhaust gas discharge temperature and the differential pressure across the packed bed and demister section of the scrubber. These devices shall be installed, operated, maintained and calibrated according to the supplier’s specifications and record minute-by-minute and average hourly data. These monitoring devices

shall be operational whenever distillation exhausts are directed to the distillation scrubber. The Permittee shall maintain logs for the maintenance and repair of these devices.

b. During any period when measurements are not recorded by the computerized data logging system, measurements shall be manually recorded at least twice per shift.

2.5.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected processes:

a. Records of normal distillation process operating parameters, hourly average, with supporting calculations and documentation:

i. Beer feed rate

ii. Beer well ethanol content

iii. 190-proof feed rate

iv. 200-proof feed rate

b. Records for any period during which any affected process was in operation when the scrubber was not in operation or was malfunctioning so as to cause an emissions level in excess of the emissions limitation.

c. A log and log for inspection, maintenance, and repairs for distillation process and the associated scrubber.

d. Records for any upsets in the affected process or other operations that could generate additional VOM or HAP emissions, with a description of the incident, an estimate of the additional VOM and HAP emissions that occurred with supporting calculations, and background information.

e. Records of the VOM and HAP emissions from the affected processes (tons/month and tons/year), as determined at the scrubber and any other vents, based on appropriate emission factors, with supporting calculations.

Note: For the purpose of these records, HAPS shall include acetaldehyde and other organic HAPs emitted from the affected processes as addressed during emissions testing.

2.5.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected process as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of applicable requirements for the scrubber by more than 2.0 percent, as determined by the monitoring required by Condition 2.5.8, that lasts longer than three hours, the Permittee shall immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. If there is any deviation of the requirements of this permit, not addressed by the above reporting requirements, as determined by the records required by this permit or by other means, the Permittee shall submit a report with the quarterly compliance report.

c. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.5.11 Compliance Procedures

Compliance with the emission limits of Condition 2.5.6(b) shall be based on the records required by Conditions 2.5.8 and 2.5.9, and appropriate emissions factors developed from testing of the affected processes.

2.6 Feed Drying and Handling Operations

2.6.1 Description

A natural gas fired drum type dryers will be used to produce dry feed from wet cake. The dryers will be equipped with a cyclone to control emissions of PM_{10} and a regenerative thermal oxidizer (afterburner) to control emissions of CO, VOM, and HAP from the dryers. The RTO also controls the associated feed cooler, which will be exhausted through the dryer after passing through a baghouse for control of its PM_{10} emissions.

2.6.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Feed Drying and Cooing	Dryers	Thermal Oxidizer/Cyclone
	Feed Cooler	
	Conveyors	----
Feed Storage and Loadout	Dry Feed Storage	----
	Conveyors	----
	Truck and Rail Loadout	Baghouse
	Wet Feed Storage and Loadout	----

2.6.3 Applicability Provisions and Applicable Regulations

a. An “affected unit” for the purpose of these unit specific conditions is an emission unit described in Conditions 2.6.1 and 2.6.2.

b. The affected units are subject to 35 IAC 212.321. [Refer to Condition 2.3.3(c)]

c. The affected units are subject to 35 IAC 218.301. [Refer to Condition 2.4.3(c)]

d. The emission of smoke or other particulate matter from the affected units shall not have an opacity greater than 30 percent. Compliance with this limit shall be determined by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9. [35 IAC 212.109 and 212.123(a)]

2.6.4 Non-Applicability of Regulations of Concern

For the feed dryer, this permit does not address the applicability of 35 IAC 215.301 because the organic material emissions of the feed dryer are required to be controlled by greater than 85%, such that organic material emissions are less than 8.0 lb/hr. [Refer to Condition 2.6.6(a)]

2.6.5 Operational and Production Limits and Work Practices

a. i. Natural gas shall be the only fuel fired in the feed dryers.

ii. The rated firing rate of the feed dryers combined shall not exceed 92 million Btu/hour each.

iii. The feed dryer shall be equipped, operated, and maintained with low NO_x burners.

b. i. Natural gas shall be the only fuel fired in the afterburner.

ii. The rated firing rate of the afterburner shall not exceed 22.5 million Btu/hour.

c. i. During operation of the feed dryer, the key operating parameters of the feed dryer/control system shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements, including the following:

A. Maximum temperature at inlet of feed dryer: °F.

B. Minimum Pressure drop across the cyclones: inches H_2O.

ii. During periods when feed is present in the dryer or emissions from other units are vented to the afterburner, the minimum afterburner combustion chamber temperature shall be maintained at a temperature that is consistent with the temperature at which emission testing demonstrated compliance with applicable requirements.

iii. The combustion chamber of the afterburner shall be preheated to the manufacturer’s recommended temperature or a temperature that is consistent with the most recent emission test in which compliance was demonstrated, prior to sending the wet cake to the feed dryer or venting other units to the afterburner.

iv. Notwithstanding the above, for the purpose of evaluation of the control system and further emission testing, the Permittee may operate the control system at different operating parameters in accordance with a detailed plan describing the

evaluation and testing program submitted to and approved by the Illinois EPA.

d. i. When feed is present in the dryer, the dryer shall be vented to the bypass stack for the afterburner only as necessary for operating safety, e.g., purge and reignition of the dryer/afterburner system in the event of a burner flameout or orderly shutdown of the dryer.

ii. Other units controlled by the afterburner shall be vented either to the afterburner or to their existing control equipment and stacks.

e. The Permittee shall operate and maintain the feed dryer and associated control system in accordance with written procedures developed and maintained by the Permittee. These procedures shall provide for good air pollution control practices to minimize emissions and shall include the Permittee's standard operating procedures for startup, normal operation, and shutdown of the dryer system and address likely malfunction and upsets events for the dryer system.

f. i. If the initial emission testing of the feed dryer/afterburner, shows compliance with requirements for VOM emission by less than 20 percent of the permitted VOM emissions, the Permittee shall implement a Control Improvement Program (Program) for the affected process with the objective of achieving compliance by a margin of at least 20 percent.

ii. The Permittee shall submit a copy of the Program to the Illinois EPA for its review and comments within 30 days after receiving test results that triggers this requirement for a Control Improvement Program (Program).

iii. A. If the emission testing demonstrated that the compliance margin was between 10 and 20 percent, the Program shall be completed in one year.

B. If the emission testing demonstrated the compliance margin was less than 10 percent, the Program shall be completed in six months.

C. Following completion of the Program, the Permittee shall again test VOM emissions from the affected unit.

g. Emissions of particulate matter from feed loadout shall be controlled by partial enclosure and loadout practices to minimize loss of dust.

2.6.6 Emission Limitations

a. i. The VOM emissions from the feed dryer shall be controlled by at least 99 weight percent.

ii. The CO emissions from the feed dryer shall be controlled by at least 90 weight percent.

b. i. Emissions of the feed dryers/afterburner shall not exceed the following limits:

Pollutant	(lb/hr)	(tons/yr)
NO_x	10.55	46.21
CO	4.09	17.91
VOM	2.99	13.10
PM/PM_{10}	6.31	27.64
SO_2	0.06	0.27

ii. A. Fabric filter (baghouse) on dry feed loadout shall comply with an emission limit of 0.01 grain per standard cubic feet (gr/scf).

B. Emissions of PM from dry feed loadout shall not exceed 0.43 lb/hr and 1.88 tons/yr.

iii. Emissions of PM from feed cooler cyclone shall not exceed 0.38 lb/hr and 1.65 tons/year.

iv. A. Emissions of VOM from the wet cake transfer and loadout operation shall not exceed 0.2 lb/hr and 1.0 tons/year.

B. This permit is issued based on negligible PM emissions from the wet cake transfer and loadout operation. For this purpose, PM emissions shall not exceed 0.1 lb/hr and 0.44 tons/yr.

c. i. The acetaldehyde emissions of the feed dryer/afterburner shall not exceed 0.02 lb/hr and 0.1 tons/yr.

ii. The emissions of individual HAPs, other than acetaldehyde, from the feed dryer/afterburner shall not exceed 0.07 lb/hr and 0.33 tons/yr.

iii. The emissions of total HAPs, other than acetaldehyde, from the feed dryer/afterburner shall not exceed 0.09 lb/hr and 0.4 tons/yr.

2.6.7 Testing Requirements

The Permittee shall perform emission tests as requested for an affected unit as specified in Condition 3.1.

2.6.8 Monitoring and Instrumentation Requirements

a. The Permittee shall install, operate, and maintain the following monitoring devices for the feed dryers, which shall be operated at all times that the feed dryers is in operation. These devices shall record appropriate parameters at least every 15 minutes and this data and hourly average data shall both be recorded.

i. Inlet temperature and outlet temperature of the feed dryers.

ii. Differential pressure (pressure drop) across the cyclones.

iii. Combustion chamber temperature of the afterburner.

b. The Permittee shall install, operate, and maintain devices to monitor the valve or damper position on the flow control devices directing the various exhaust streams to the afterburner, which shall be operated at all times that the plant is in operation. The position of these valves shall be monitored electronically by the plant operating system.

c. i. These devices shall be installed, operated, maintained and calibrated in accordance with good air pollution control practice for reliable operation and accurate data. The Permittee shall maintain logs for the maintenance and repair of these devices.

ii. The temperature monitor shall be maintained within an accuracy of 1 percent.

2.6.9 Recordkeeping Requirements

a. The Permittee shall maintain records of the following items:

i. Design information for the feed dryer/afterburner:

A. The design heat input of the feed dryer.

B. Moisture removal capacity, lb water/hour.

C. The design heat input of the afterburner, Btu/hr.

ii. Feed production as shipped wet or dry (tons/month and tons/year, each).

iii. Records for venting the feed dryers through the bypass stack and upsets in feed dryers operations or other operations that could generate additional emissions, with a description of the incident, explanation, and corrective actions and any preventative measures taken, and an estimate of the additional CO, VOM, PM, and HAP emissions that occurred, with supporting calculations and background information.

iv. Monthly and annual NO_x, CO, PM, SO_2, VOM, and HAP emissions from the feed dryer/afterburner, with supporting calculations.

Note: For the purpose of these records, HAPS shall include acetaldehyde and other organic HAPs emitted from the dryer identified during emissions testing.

b. The Permittee shall maintain an operation log and a log for inspection, maintenance, and repairs for feed dryers and associated afterburner, including the time when feed is present in the dryer, the afterburner not in operation, or the afterburner is by passed.

c. The Permittee shall comply with the requirements of Condition 2.3.9(c), (d), (e) and (f) for handling, storage and loadout of feed.

2.6.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.

a. i. If there is an exceedance of applicable requirements for the afterburner, as determined by the monitoring required by Condition 2.6.8 that lasts longer than two hours, the Permittee shall immediately notify the Illinois EPA. The initial notification for such a deviation may be supplemented with additional information submitted within 7 days of the

deviation, as needed to provide all information required by Condition 3.4.

ii. Excess opacity that lasts more than 24 minutes (four 6-minute averaging periods) shall be immediately reported to the Illinois EPA.

iii. The deviations addressed above and all other deviations from applicable requirements for the afterburner shall be reported with the quarterly compliance report.

b. If there is any deviation of the requirements of this permit, not addressed by the above reporting requirements, as determined by the records required by this permit or by other means, the Permittee shall submit a report with the quarterly compliance report.

c. Notwithstanding the above, if a deviation from the requirements of this permit will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. This notification may be supplemented with additional information submitted within 7 days of the deviation, as needed to provide all information required by Condition 3.4(a).

2.6.11 Compliance Procedures

a. For VOM and CO emissions from the feed dryer/afterburner and cooler, periods of excess emissions shall include any 1-hour period in which the average combustion temperature, when process units controlled by the afterburner are operating, was more than 50°F below the temperature during testing than demonstrated compliance with applicable requirements. Additional provisions or revised provisions defining excess emissions may be included in subsequent permits based on actual operating data and experience.

b. Compliance with the emission limits of Condition 2.6.6(b) and (c) shall be based on the equipment operation, as addressed by the records required by Condition 2.6.9 and appropriate emissions factors based on emission testing of the feed dryer/afterburner.

2.7 Ethanol and Denaturant Storage Tanks

2.7.1 Description

Internal floating roof storage tanks are used to store denaturant and product ethanol.

2.7.2 List of Emission Equipment and Pollution Control Equipment

Process	Description	Emission Control Equipment
Storage Tanks	Off-Spec Tank	External Floating Roof with Primary and Secondary Seals
	Ethanol Day Tank	External Floating Roof with Primary and Secondary Seals
	Gasoline Denaturant Tank	External Floating Roof with Primary and Secondary Seals
	Denatured Ethanol Tank	External Floating Roof with Primary and Secondary Seals

2.7.3 Applicability Provisions

a. An "affected tank," for the purposes of these unit specific conditions is a storage tank described in Conditions 2.7.1 and 2.7.2.

b. The affected tanks are subject to the NSPS for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb, and related provisions in Subpart A.

c. The affected tanks are subject to the control requirements of 35 IAC 218.122(b), which requires a permanent submerged loading pipe or an equivalent device approved by the Illinois EPA. The Illinois EPA has not approved any alternative control. [Submerged Loading Pipe - 35 IAC 218.122(b)]

2.7.4 Non-Applicable Regulations

For the affected tanks, this permit does not address the applicability of 35 IAC 218.120, 218.127, and 218.128. This is based on the Illinois EPA's finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 218.120, 218.127, and 218.128, following the review of the requirements of 40 CFR 60 Subpart Kb and 35 IAC 218.120, 218.127, and 218.128.

2.7.5 Control Requirements

Each affected tank shall be equipped with an external floating roof and shall comply with the following requirements:

a. closure devices between the wall of the storage vessel and the edge of the roof. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

   i. The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in the 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

   ii. The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4).

b. i. Each opening in a non-contact external floating roof except for automatic bleeder vents and rim space vents shall provide a projection below the liquid surface.

   ii. Each opening in the external floating roof except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves shall be equipped with a gasketed cover, seal or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use.

   iii. Automatic bleeder vents shall be closed at all times when the roof is floating except when the roof is being floated of or is being landed on the roof leg supports.

   iv. Rim vents shall be set to open when the roof is being floated off the roof legs supports or at the manufacturer’s recommended setting.

   v. Automatic bleeder vents and rim space vents shall be gasketed.

   vi. Each emergency roof drain shall be equip with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

c. The external floating roof shall float on the liquid surface at all times (i.e., off the roof leg support), except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports

shall be continuous and shall be accomplished as rapidly as possible.

2.7.6 Emission Limitations

Emissions of VOM from the affected tanks shall not exceed 2.12 tons/year.

2.7.7 Operating Requirements

Each affected tank is limited to the storage of ethanol or denaturant.

2.7.8 Inspection Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(b) for each affected tank, including the following:

a. Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency:

   i. Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

   ii. Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

   iii. Any affected tank that ceases to store VOL for period of one year or more, subsequent introduction of VOL into the affected tank shall be considered an initial fill for the purpose of above requirements.

b. Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

   i. Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

   ii. Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall

of the storage vessel and measure the circumferential distance of each such location.

iii. The total surface area of each gap described above shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

c. Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in Condition 2.7.8(d).

d. Make necessary repairs or empty the affected tanks within 45 days of identification in any inspection for seals not meeting the following requirements:

i. The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

A. One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

B. There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

ii. The secondary seal is to meet the following requirements:

A. The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in Condition 2.7.8(d)(iii).

B. The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

C. There are to be no holes, tears, or other openings in the seal or seal fabric.

iii. If a failure is detected during inspections required in Condition 2.7.8(a) that cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Illinois EPA in the inspection report required in 40 CFR 60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

e. Notify 30 days in advance of any gap measurements required in Condition 2.7.8(a) to allow an opportunity to have an observer present.

f. Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

2.7.9 Recordkeeping Requirements

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for each affected tank pursuant to 40 CFR 60.115b(b), including keep a record of each inspection performed as required by Condition 2.7.8. [40 CFR 60.115b(a)(2)]

i. The date the inspection was performed;

ii. Who performed the inspection;

iii. The method of inspection;

iv. The observed condition of each feature of the external floating roof, with the raw data recorded during the inspection; and

v. Summary of compliance.

b. The Permittee shall maintain records of the following for each affected tank to demonstrate compliance with the Out-of-Service Inspection requirements of Condition 2.7.8(d):

Sufficient records to identify whenever the tank is empty for any reason or whenever repairs are made as a result of regular inspection or incident of roof damage or defect.

c. i. The Permittee shall keep the operating records required by 40 CFR 60.116b for each affected tank, as follows:

Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

ii. The Permittee shall keep the Material Safety Data Sheet (MSDS) or other comparable data for the VOLs stored in each affected tanks, which records shall be used to identify HAPs that may be emitted from the storage and loadout of VOL.

d. The Permittee shall keep monthly and annual VOM and HAP emissions attributable to the affected tanks in tons/month and ton/year in accordance with the compliance procedures in Condition 2.7.11 to be calculated and recorded at least annually, unless a more frequent determination is necessary to determine whether the plant's annual emissions of VOM have exceeded the limit in Table I.

2.7.10 Reporting Requirements

a. The Permittee shall fulfill all applicable reporting and notification requirements of the NSPS, 40 CFR 60.7, for the affected tanks.

b. The Permittee shall submit written notifications and reports to the Illinois EPA as required by the NSPS, for each affected tank, as follows:

i. If any of the conditions described in Condition 2.7.8 are detected during the annual visual inspection required in Condition 2.7.8, a report shall be furnished to the Illinois EPA within 30 days of the inspection. Each report shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made.

ii. For the inspection required in Condition 2.7.8(f) above, the Permittee shall notify the Illinois EPA in writing at least 30 days prior to filling or refilling of each affected tank to allow the opportunity to inspect the affected tank prior to refilling. If the inspection required is not

planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the Illinois EPA at least 7 days prior to the refilling of the affected tank. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Illinois EPA at least 7 days prior to the refilling.

c. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected tanks as follows. These notifications shall include the information specified by Condition 3.4.

i. If a tank is damaged so there is a deviation from an applicable requirements, which is not repaired or otherwise corrected within 24 hours, the Permittee shall then immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.7.11 Compliance Procedures

Emissions from the affected storage tanks shall be determined based on operating information for the tanks and the USEPA's TANKS program.

2.7.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to continue to comply with applicable requirements and to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in seal type and configuration, made during the course of normal repair and maintenance of an affected storage tank's floating roof.

2.8 Loading Rack

2.8.1 Description

The loading rack transfers ethanol into tank trucks or railcars for shipment. VOM emissions occur from the VOM-laden air displaced from the tank when material is loaded.

2.8.2 List of Emission Units and Pollution Control Equipment

Process	Description	Emission Control Equipment
Ethanol Loadout	Loading Rack Used for Loading Ethanol Into Trucks and Railcars	----
	Truck Loadout	Flare
	Rail Loadout	Dedicated Tankers

2.8.3 Applicability Provisions and Applicable Regulations

a. An "affected loading rack," for the purpose of these unit-specific conditions, is a loading rack described in Conditions 2.8.1 and 2.8.2.

2.8.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected loading rack not being subject to applicable requirements for handling of gasoline because the vapor pressure of the ethanol product is less than 4.0 psi and hence will not be subject to the requirements applicable to handling of gasoline, including 40 CFR 60 Subpart XX, the NSPS for Bulk Gasoline Terminals.

b. The affected loading rack is excused from the requirement to use submerged loading pipes pursuant to 35 IAC 218.122(a) because each affected loading rack is equipped and operated with vapor collection and control equipment.

2.8.5 Control Requirements and Operational Limitations

a. The Permittee shall route vapor displaced by ethanol loadout into the truck to the flare system.

b. The flare shall be designed and be operated to comply with applicable requirements of 40 CFR 60.18, including:

i. The flare shall be operated by the Permittee with no visible emissions as determined by the methods specified in 40 CFR 60.18(f)(1), except for periods

not to exceed a total of 5 minutes during any 2 consecutive hours.

ii. The flare shall be operated by the Permittee with a flame present when vapors displaced by ethanol loadout are being vented to it, as determined by the methods specified in 40 CFR 60.18(f)(2).

iii. The flare shall be used only with the net heating value of the gas being combusted being 300 Btu/scf or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). Note: Natural gas or other gaseous fuel may be added to the displaced vapors to comply with this requirement.

iv. The flare shall be operated by the Permittee with an exit velocity less than the maximum allowable velocity, V_{max}, as determined by the method specified in 40 CFR 60.18(f)(6).

v. The Permittee shall monitor the flare to ensure that it is operated and maintained in conformance with the manufacture=s design, as required by 40 CFR 60.18(d).

c. The Permittee shall generally operate the ethanol loading rack with the flare system in accordance with good air pollution control practice to minimize emissions of VOM.

d. The vapor control system shall be operated at all times during the loading of organic liquids and all displaced vapors are to be vented only to the vapor control system.

e. At all times during the loading of organic liquids, the vapor control system shall operate and all vapors displaced in the loading of organic materials are to be vented only to the vapor control system.

f. There shall be no liquid drainage from the loading device of the affected loading rack when it is not in use.

g. The Permittee shall provide a pressure tap or equivalent on the vapor collection system associated with an affected loading rack. The vapor collection system and the organic material loading equipment shall be operated in such a manner that it prevents avoidable leaks of liquid during loading or unloading operations and prevents the gauge pressure from exceeding 18 inches of water and the vacuum from exceeding 6 inches of water and to be measured as close as possible to the vapor hose connection.

h. All loading and vapor return lines shall be equipped with fittings that are designed to be vapor tight.

2.8.6 Emission Limitations

a. This permit is issued based on the flare achieving a nominal VOM destruction efficiency of at least 95 percent.

b. The total organic compound emissions from the affected loading rack shall not exceed 0.3131 pounds per 1000 gallons of material loaded. This rate shall include those emissions not captured or controlled.

c. Emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic material (VOM) from ethanol loadout and flaring shall not exceed the following limits:

Pollutant	Emission Limits (Tons/Month)	(Tons/Year)
NO_x	0.01	0.10
CO	0.05	0.54
VOM	0.65	7.83

These limits are based on the information in the application for the flare.

e. This permit is issued based on minimal emissions of PM and SO_2 from the flare. For this purpose, emissions shall not exceed a nominal emission rate of 0.2 pound/hour and 1.0 tons/year.

2.8.7 Testing Requirements

Upon written request by the Illinois EPA, The Permittee shall perform emission tests as requested for the affected loading rack as specified in Condition 3.1.

2.8.8 Monitoring Requirements

a. The Permittee shall operate the affected loading rack and flare in accordance with written procedures. These procedures may be the procedures provided by the supplier of equipment or procedures developed and maintained by the Permittee.

b. The Permittee shall keep a copy of the operating and maintenance procedures for the flare system provided by the supplier at a location at the plant where they are readily accessible to the individuals who are responsible for operation and maintenance of the flare.

2.8.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items for the affected loading rack:

a. Operating records for each day on which ethanol loadout is conducted, as follow:

i. Date and amount of ethanol loaded.

ii. Confirmation that established operating procedures were followed.

iii. Confirmation that the flare functioned properly, i.e., a flame was present and no visible emissions were observed except as allowed by 40 CFR 60.18(c)(1).

b. Records for each event when ethanol loadout continues when the flare is not operating properly to control VOM emissions:

i. Date, time, and duration of event.

ii. Description of event.

iii. Estimated amount of ethanol loaded until the situation was corrected or loadout ceased.

iv. Reason why loadout could not be immediately ceased.

v. Corrective actions taken.

vi. Actions taken to prevent or reduce the likelihood of future occurrences.

c. An inspection, maintenance and repair log for the flare system, which lists activities that are performed, with date and responsible individual(s).

d. Monthly and annual records of the emissions of VOM, CO, NO_x and HAP from the affected loading rack, with supporting calculations. For this purpose, standard emission factors shall be used for periods when the flare operates properly, e.g., 95 percent destruction of VOM. For periods when the flare does not operate properly, specific estimates of emissions shall be made, accompanied by written justification or explanation.

2.8.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected loading rack as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of applicable requirements during loadout of ethanol that lasts longer than one hour, the Permittee shall immediately notify the Illinois EPA. For this purpose, an exceedance shall be considered to continue even if operation of the loading rack is interrupted if the exceedance condition is still present when operation is resumed.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.8.11 Compliance Procedures

Compliance with the emission limits of Condition 2.8.6 shall be based on the records required by Condition 2.8.9, the use of appropriate emission factors, developed using published USEPA emissions estimation methodology, and standard USEPA emission factors, as control systems are properly operated.

2.8.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical changes with respect to these units without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner if these changes would accompany an activity that would constitute construction or modification of an emission unit, as defined in 35 IAC 201.102.

Changes in fittings made during the course of repair and maintenance of the affected loading rack.

2.9 Leaking Components

2.9.1 Description

Equipment components, such as valves, flanges, etc., involved with the fermentation, distillation and subsequent handling of ethanol and denaturant generate VOM emissions when they leak.

2.9.2 List of Emission Equipment and Pollution Control Equipment

Emission Unit	Description	Emission Control Measures
Process Components (Valves, Flanges, Pumps, Seals, etc.)	Processing of Organic Material through the Plant's Piping System	Leak Detection and Repair Program

2.9.3 Applicability Provisions

a. The "affected components" are equipment components, described in Condition 2.9.1 and 1.9.2 that are in VOM service.

b. The affected components associated with the fermentation and distillation operations are subject to the NSPS for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, 40 CFR 60, Subpart VV, and related provisions in Subpart A.

2.9.4 Non-Applicable Regulations

a. This permit is issued based on affected components not being subject to the requirements of 35 IAC Part 218, Subpart Q, Leaks from Synthetic Organic Chemical and Polymer Manufacturing Equipment, pursuant to the applicability provisions at 35 IAC 218.420, because the plant will have less than 1,500 components in gas or light liquid service (which components are used to manufacture the chemicals or polymers listed in 35 IAC Part 218, Appendix D).

b. For the affected components, this permit does not address the applicability of 35 IAC 218.142 to certain components because the leaks of organic material are being addressed by the requirements of the NSPS, 40 CFR 60 Subpart VV or comparable requirements, which require timely repairs of any leaking component.

2.9.5 Control Requirements

For affected components, that are subject to 40 CFR 60, Subpart VV the Permittee shall follow the work practice requirements set

forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 or 60.483-2, where applicable.

2.9.6 Emission Limitations

a. Emissions of VOM from the affected components shall not exceed 4.25 tons per year, total, as determined by use of appropriate USEPA methodology for estimating emissions from leaking components.

2.9.7 Operating Requirements

a. For affected components that are not subject to 40 CFR Part 60, Subpart VV, the Permittee shall repair any affected component from which a leak of volatile organic liquid (VOL) is detected or observed. The repair shall be completed as soon as practicable but no later than 21 days after the leak is found. If the leaking component cannot be repaired until the process unit is shut down, the leaking component must then be repaired before the unit is restarted.

b. For affected components that are subject to 40 CFR 60, Part 60, Subpart VV the Permittee shall follow the operating requirements set in 40 CFR 60.482-1 (Standards: general), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service), 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

2.9.8 Inspection Requirements

For all affected components that are in VOC service, as defined by 40 CFR 60.481, other than components in vacuum service, the Permittee shall follow the inspection requirements set forth in 40 CFR 60.482-1 (Standards: General), 60.482-2 (Standards: Pumps in light liquid service), 60.482-4 (Standards: Pressure relief devices in gas/vapor service), 60.482-5 (Standards: Sampling connection systems), 60.482-6 (Standards: Open-ended valves or lines), 60.482-7 (Standards: Valves in gas/vapor service and light liquid service)*, 60.482-8 (Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors), 60.482-9 (Standards: Delay of repair), and 60.482-10 (Standards: Closed vent systems and control devices).

* The Permittee may elect to utilize the alternative standards of 40 CFR 60.483-1 through 60.483-2, where applicable.

2.9.9 Recordkeeping Requirements

The Permittee shall maintain the following records related to affected components:

a. The applicable records as specified in 40 CFR 60.486.

b. A leaking components monitoring log, which shall contain the following information:

i. The name of the process unit where the component is located;

ii. The type of component (e.g., valve, pump seal);

iii. The identification number of the component;

iv. The date on which a leaking component is discovered;

v. The date on which a leaking component is repaired;

vi. The date and instrument reading of the recheck procedure after a leaking component is repaired;

vii. A record of the calibration of the monitoring instrument;

viii. The identification number of leaking components which cannot be repaired until process unit shutdown; and

ix. The total number of components inspected and the total number of components found leaking during that monitoring period.

c. All required reports as specified at 40 CFR 60.487.

d. Records on at least an annual basis of the VOM and HAP emissions attributable to affected components, with supporting documentation and calculations.

2.9.10 Reporting Requirements

a. The Permittee shall fulfill all applicable notification and reporting requirements of the NSPS for the affected components.

b. The Permittee shall report any deviations from the requirements of this permit for the affected components in the quarterly compliance report submitted to the Illinois EPA. These reports shall include the information specified by Condition 3.4.

2.9.11 Compliance Procedures

Compliance with emission limits of Condition 2.9.6 shall be based on the records required by Condition 2.9.9 and the use of appropriate USEPA emissions factors for VOM losses from leaking components.

2.9.12 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to repair and replace affected components without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102.

2.10 Cooling Tower

2.10.1 Description

A non-contact cooling tower is used to support the heat exchangers used to cool process streams and to condense surplus steam being returned to boilers.

2.10.2 List of Emission Units and Pollution Control Measures

Process	Description	Control Measure
Cooling Tower	Non-Contact Cooling Tower	Drift Eliminator

2.10.3 Applicable Regulations

The cooling tower is subject to 35 IAC 212.321. (Refer to Condition 2.4.2(b).)

2.10.4 Non-Applicability of Regulations of Concern

None

2.10.5 Operational and Production Limits and Work Practices

None

2.10.6 Emission Limitations

Emissions of PM from the cooling tower shall not exceed 1.1 lb/hr and 4.60 tons per year.

2.10.7 Testing Requirements

None

2.10.8 Monitoring Requirement

None

2.10.9 Recordkeeping Requirements

The Permittee shall maintain records of the following information for the cooling tower:

a. The design data for the cooling tower, including water circulation rate (gal/min) and design loss rate of the drift eliminators (percent).

b. Total dissolved solids concentration of the water circulated in the cooling tower on at least a quarterly basis (ppm).

c. Records on at least an annual basis of the PM emissions from the cooling tower, with supporting documentation and calculations.

2.10.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the cooling tower as follows. These notifications shall include the information specified by Condition 3.4.

i. If the cooling tower is damaged so there is a deviation from an applicable requirements that is not repaired or otherwise corrected within 24 hours, the Permittee shall then immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

2.10.11 Compliance Procedures

Compliance with Condition 2.10.6 shall be based on the records required by Condition 2.10.9 and the use of appropriate emission factors.

2.11 Roadways And Other Sources Of Fugitive Dust

2.11.1 Description

Fugitive dust/particulate matter emissions are generated by vehicle traffic on roadways and parking lots at the plant.

2.11.2 List of Emission Units and Pollution Control Measures

Operation	Description	Control Measure
Fugitive Dust	Plant Roads and Parking Lots and Vehicle Traffic	Paving and Sweeping

2.11.3 Applicable Regulations

a. The "affected operations" for the purpose of these unit-specific conditions are the operations described in Condition 2.11.1 and 2.11.2.

b. Visible emissions of fugitive particulate matter from any process, including material handling or storage activity, shall not be present beyond the property line of the source, pursuant to 35 IAC 212.301. (See also Condition 1.3(a))

2.11.4 Non-Applicability of Regulations of Concern

a. The affected operations are not subject to the requirements of 35 IAC 212.321 ("the process weight rate" rule) because of the disperse nature of these emissions units. [35 IAC 212.323]

2.11.5 Operational and Production Limits and Work Practices

a. The Permittee shall follow good air pollution control practices to minimize nuisance fugitive dust from plant roads, parking areas, and other open areas of the plant. These practices shall provide for pavement on all regularly traveled entrances and exits to the plant and treatment (sweeping, application of water, use of dust suppressant, etc., when necessary) of paved and unpaved roads and areas that are routinely subject to vehicle traffic.

b. i. The Permittee shall carry out control measures for fugitive dust in accordance with a written control program maintained by the Permittee. This program shall set forth the measures being implemented to demonstrate compliance with Conditions 2.11.3, 2.11.5(a) and 2.11.6, to control fugitive dust at each area of the plant with the potential to generate significant quantities of fugitive dust.

This program shall include: (i) A map or diagram showing the location of all fugitive emission units controlled, including the location, identification, length, and width of roadways, and volume and nature of expected traffic or other activity; (ii) estimated dust emissions control technique (e.g., water spray surfactant spray, water flushing, or sweeping); (iii) triggers for additional control, e.g., observation of extended dust plumes following passage of vehicles.

ii. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review within 90 days of a request from the Illinois EPA for a revision to the program to address observed deficiencies in the control program.

2.11.6 Emission Limitations

Emissions of PM from the affected operations shall not exceed 7.89 tons per year, as determined by use of appropriate USEPA methodology for estimating emissions of fugitive dust.

2.11.7 Testing Requirements

None

2.11.8 Monitoring Requirement

None

2.11.9 Recordkeeping Requirements

The Permittee shall maintain the following records with respect to the affected operations:

a. A file documenting assumptions about the quantity and nature of vehicle traffic at the plant as related to the grain receipts and loadout of ethanol and feed.

b. Records documenting implementation of the fugitive dust control program, including:

i. For each dust control treatment of a roadway: the name and location of the roadway controlled, the type of treatment, identification of each truck used, application rate of water or other dust suppressant material, and total quantity of material applied;

ii. A log recording incidents when control measures were not carried out as scheduled or were not fully implemented and incidents when additional control measures were carried out, with description of each such incident and explanation. This log shall address any adjustments to the scheduling of control measures made by the Permittee due to weather conditions that either acted to reduce or increase the level of potential dust, such as precipitation or extended periods of dry weather.

c. Records on at least an annual basis of the PM emissions from the affected operations, with supporting documentation and calculations.

2.11.10 Reporting Requirements

a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for affected operations as follows. These notifications shall include the information specified by Condition 3.4.

i. If there is an exceedance of Condition 2.11.3(b) that lasts longer than one hour, the Permittee shall immediately notify the Illinois EPA.

ii. The deviations addressed above and all other deviations shall be reported with the quarterly compliance report.

b. With the Quarterly Emission Report, the Permittee shall submit the following information to the Illinois EPA:

Dates when control measures otherwise required by the dust control program were not carried out with explanation.

2.11.11 Compliance Procedures

Compliance with Condition 2.11.6 shall be based on the records required by Condition 2.11.9 and the use of appropriate USEPA methodology for estimating emissions of fugitive dust.

Section 3: General Conditions

3.1 Emission Testing

a. i. Within 180 days of initial startup of feed dryers, emissions of selected units as specified in the following table, shall be measured during conditions which are representative of maximum emissions:

	Emissions					Efficiency	
Emission Unit/Process	PM	VOM	NO_x	CO	HAP	VOM	CO
Grain Receiving and Handling	X						
Milling Baghouse	x						
Fermentation Scrubber		x			x	X	
Distillation Scrubber		x			x	x	
Afterburner	X**	x	x	x	x	X*	X*
DDGS Loading Baghouse	x						
Boiler			x	x			

* Efficiency testing need not be performed if the Permittee is demonstrating compliance based on the concentration of VOM or CO in the exhaust.

** Particulate matter tests shall include measurements of condensable particulate matter, as collected in the back half of the Method 5 sampling train or by separate measurements using USEPA Method 202 (40 CFR Part 51, Appendix M).

ii. In addition to the emission testing required above, the Permittee shall perform emission tests as requested by the Illinois EPA for an emission unit within 45 days of a written request by the Illinois EPA or such later date agreed to by the Illinois EPA.

b. The following methods and procedures shall be used for testing of emissions, unless another method is approved by the USEPA or Illinois EPA. Refer to 40 CFR 60, Appendix A, for USEPA test methods.

Location of Sample Points	USEPA Method 1
Gas Flow and Velocity	USEPA Method 2
Flue Gas Weight	USEPA Method 3
Moisture	USEPA Method 4
Particulate Matter	USEPA Method 5
Nitrogen Oxides	USEPA Method 7, 7E, or 19
Opacity	USEPA Method 9
Carbon Monoxide	USEPA Method 10
Volatile Organic Material	USEPA Method 18 and 25/25A*
Hazardous Air Pollutants	USEPA Method 18*/**

* Testing shall also be conducted in accordance with industry-specific guidance from USEPA on testing VOM and HAP emissions at ethanol plants.

** USEPA Method 320 may also be used.

c. For purposes of determining compliance of the boiler with the NSPS standard:

i. The emission tests for the boiler shall be conducted and data collected in accordance with 40 CFR 60.8 and the test methods and procedures specified in 40 CFR 60.46(e).

ii. NO_x emissions shall be monitored for 30 successive boiler operating days and the 30-day average emission rate is used to determine compliance with the NSPS standard. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period, unless USEPA approves alternative procedures to demonstrate compliance with the NSPS pursuant to 40 CFR 60.13(i).

d. i. A written test plan shall be submitted to the Compliance Section of the Division of Air Pollution Control for review at least 45 days prior to the scheduled date of testing. This plan shall describe the specific procedures for testing, including as a minimum:

A. The person(s) who will be performing sampling and analysis and their experience with similar tests.

B. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and any changes in the means or manner by which the operating parameters for the emission unit and any control equipment will be determined.

C. The specific determinations of emissions and operation that is intended to be made, including sampling and monitoring locations.

D. The test method(s) that will be used, with the specific analysis method, if the method can be used with different analysis methods.

ii. As part of the approval of a test plan, the Permittee may request and the Illinois EPA may approve a program to evaluate alternative levels of operating parameters for a control device, leading to testing at new values for operating parameters. In such case, the provisions of the

approved test plan shall supersede the particular provisions of this permit with respect to the required level of operating parameters for the affected unit(s).

e. The Illinois EPA shall be notified prior to these tests to enable the Illinois EPA to observe these tests. Notification of the expected date of testing shall be submitted a minimum of 30 days prior to the expected date. Notification of the actual date and expected time of testing shall be submitted a minimum of 5 working days prior to the actual date of the test. The Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.

f. Copies of the Final Reports for these tests shall be submitted to the Illinois EPA within 14 days after the test results are compiled and finalized but no later than 45 days after completion of sampling. The Final Report shall include as a minimum:

i. A summary of results

ii. General information

iii. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule

iv. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration

g. Copies of emission test reports shall be retained for at least five years after the date that an emission test is superseded by a more recent test.

3.2 Operation or Maintenance Procedures

Where this permit requires the Permittee to operate or maintain emission units in accordance with written procedures, such procedures may incorporate procedures provided by the equipment supplier.

3.3 Inspection, Maintenance and Repair Logs

Inspection, maintenance and repair logs shall include the following information:

a. Identification of equipment, with date, time, responsible party and description of activity.

b. Description of any corrective actions or preventative measures taken as result of inspection.

3.4 Reporting of Deviations

a. Reports of deviations shall include the following information:

i. Identify the deviation, with date, time, duration and description.

ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.

iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.

b. Quarterly compliance report shall be submitted no later than 45 days after the preceding calendar quarter. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.

c. If there are no deviations during the calendar quarter, the Permittee shall still submit a compliance report, which report shall state that no deviations occurred during the reporting period.

If you have any questions on this permit, please call Minesh Patel at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:MVP:psj

cc: Region 1

ATTACHMENT A

Listing of Identified Emission Units and Process Equipment

Operation	Emission Unit/Process Equipment	Emission Control Equipment
Boiler	Boiler	Low-NO_x Burner
	Boiler Feedwater Tank	----
Emergency Generator	Diesel Generator	----
Grain Receiving and Storage System	Truck and Rail Dump Station	Baghouse 1
	Conveyors	
	Elevators	
	Storage Silos	
	Cleaner	Baghouse 2
	Grain Surge Bin	
	Hammermill Feed	
Grain Milling	Hammermills	Baghouse 3
	Hammermill Discharge Conveyors	
Feed Preparation	Process Tanks	----
	Slurry Tank	Vent Gas Scrubber
	Cook Water Tank	Vent Gas Scrubber
	Misc. Chemical Tanks	----
	Flash Tank	Vent Gas Scrubber
	Liquifaction Tank	Vent Gas Scrubber
	Yeast Tank	Vent Gas Scrubber
Fermentation	Fermetners	Fermentation Scrubber
	Beer Well	
Distillation	Beer Column	Vent Gas Scrubber
	Stripper Column*	----
	Rectifier Column*	----
	Molecular Sieve*	----
	Mash Screen*	----
Solid Separation and Evaporation	Evaporators*	----
	Centrifuges	----
	Whole Stillage Tank	Vent Gas Scrubber
	Syrup Tank	----
	Thin Stillage Tank	Vent Gas Scrubber
Feed Drying and Cooling	Dryers	Thermal Oxidizer/Cyclone
	Feed Cooler	
	Conveyors	----
Feed Storage and Loadout	Dry Feed Storage	----
	Conveyors	----
	Truck and Rail Loadout	Baghouse
	Wet Feed Storage and Loadout	----

Operation	Emission Unit/Process Equipment	Emission Control Equipment
Storage Tanks	Off-Spec Tank	External Floating Roof with Primary and Secondary Seals
	Ethanol Day Tank	External Floating Roof with Primary and Secondary Seals
	Gasoline Denaturant Tank	External Floating Roof with Primary and Secondary Seals
	Denatured Ethanol Tank	External Floating Roof with Primary and Secondary Seals
Ethanol Loadout	Loading Rack Used for Loading Ethanol Into Trucks and Railcars	----
	Truck Loadout	Flare
	Rail Loadout	Dedicated Tankers
Process Components (Valves, Flanges, Pumps, Seals, etc.)	Processing of Organic Material through the Plant's Piping System	Leak Detection and Repair Program
Cooling Tower	Non-Contact Cooling Tower	Drift Eliminator
Fugitive Dust	Plant Roads and Parking Lots and Vehicle Traffic	Paving and Sweeping

* Enclosed

TABLE I

Annual Emission Limitations (Tons/Year)

Emission Unit(s)	NO_x	CO	VOM	PM/PM_{10}	SO_2	Acet.	Other HAP	Total HAP	Ind. HAP
Boiler	31.54	31.54	5.26	5.26	0.29	0.26	0.53	0.79	0.26
Emergency Generator	13.17	0.24	0.24	0.12	0.08	0.02	0.04	0.06	0.04
Corn Unloading	---	---	---	3.37	---	---	---	---	---
Grain Cleaning and Milling	---	---	---	6.57	---	---	---	---	---
Fermentation (Scrubber)	---	---	20.00	---	---	4.90	0.50	5.48	0.48
Distillation (Scrubber)	---	---	2.50	---	---	1.80	0.40	2.20	0.40
Solid Separation & Evaporation	---	---	0.44	---	---	0.04	0.02	0.06	0.02
Feed Dryers/Cooler/Afterburner	46.21	17.91	13.10	27.64	0.27	0.10	0.40	0.50	0.33
Cooler Cyclone	---	---	0.32	1.65	---	0.03	0.02	0.05	0.02
Dry Feed Loadout	---	---	---	0.66	---	---	---	---	---
Wet Cake Transfer & Loadout	---	---	0.44	---	---	0.04	0.02	0.06	0.02
Ethanol & Denaturant Tanks	---	---	2.12	---	---	0.21	0.11	0.32	0.11
Ethanol Loadout Rack (Flare)	0.10	0.54	7.83	0.44	0.44	0.78	0.39	1.17	0.39
Component Leaks	---	---	4.24	---	---	0.42	0.22	0.64	0.22
Cooling Tower	---	---	---	4.60	---	---	---	---	---
Miscellaneous Units	---	---	2.00	2.00	---	0.10	0.30	0.40	0.20
Plant Roads / Parking Areas	---	---	---	7.89	---	---	---	---	---
Totals	91.00	50.20	58.50	60.20	1.10	8.70	3.00	11.70	2.50